CLAIMS

1 (Currently amended): An apparatus for manufacturing a ~~A~~ miniature optics, ball holding solar concentrator sheet comprising the fabrication stages of:

a) embedding an array of rotatable mirrored balls for concentrating solar energy ~~are embedded~~ in said sheet;

b) disposing said array ~~disposed~~ behind an optically transmissive surface;

c) encapsulating each of said mirrored balls ~~encapsulated~~ in a surrounding medium of an optically transmissive fluid; and

d) providing electric coupling means to rotate said mirrored balls within said sheet.

2 (cancelled): The apparatus of claim 1, wherein said sheet is a part of a solar concentrator.

3 (Original): The apparatus of claim 1, wherein said fluid is a lubricant.

4 (Original): The apparatus of claim 1, wherein said fluid is a dielectric.

5 (Currently amended): A manufacturing method for improving the rotatability of mirrored balls disposed in a miniature optics, ball holding solar concentrator sheet comprising the steps of:

a) providing said sheet with an optically transmissive surface;

b) surrounding said mirrored balls for concentrating solar energy with a shell of a lubricating fluid; and

c) electromagnetic coupling means to rotate said mirrored balls within said sheet.

6 (cancelled): The method according to claim 5, wherein said sheet is a part of a solar concentrator.

7 (Original): The method according to claim 5, wherein said fluid is optically transmissive.

8 (Original): The method according to claim 5, wherein said fluid is a dielectric.

9 (Currently amended): A method for fabricating lubricating receptacles containing encapsulated rotatable mirrored balls in an optically transmissive solar concentrator sheet by means of at least one infiltrating fluid, the method comprising the process ~~steps~~ of:

a) holding said mirrored balls for concentrating solar energy somewhat rigidly captive in place in said sheet during and at the completion of its formation; and

b) introducing said infiltrating fluid to expand said sheet and form small fluid-filled annular cavities surrounding said rotatable mirrored balls.

10 (Previously amended): The method according to claim 9, wherein at least one dissolvable tray holds said mirrored balls in place in said sheet during its formation.

11 (Original): The method according to claim 9, wherein at least one pillar supports said sheet to enhance fluid access during the sheet infiltration and expansion process.

12 (Original): The method according to claim 9, wherein at least one of the fluids is optically transmissive.

13 (Original): The method according to claim 9, wherein at least one of the fluids is a dielectric.

14 (Original): The method according to claim 9, wherein the index of refraction of at least one of the fluids approximately matches that of said sheet.

15 (Original): The method according to claim 9, wherein the density of at least one of the fluids approximately matches that of said mirrored balls.

16 (Original): The method according to claim 9, wherein at least one of the fluids is lubricating.

17 (Original): The method according to claim 9, wherein at least one of the infiltrating fluids is vaporously removed.

18 (Currently amended): The method according to claim 9, wherein the ratio of the overall volume ~~of the material~~ of said sheet (not including the volume of the ball cavities) to the volume of said mirrored balls is between a factor of 2 to 3.

19 (Original): The method according to claim 9, wherein at least one monolayer of said rotatable mirrored balls is encapsulated in said sheet.

20 (Original): The method according to claim 9, wherein a random dispersion of rotatable mirrored balls are encapsulated in said sheet.

21 (Original): The method according to claim 9, wherein the mirrored balls are pre-coated prior to being embedded in said sheet.

22 (Original): The method according to claim 9, wherein the mirrored balls are asymmetrically closer to the top of said sheet than to the bottom.

23 (Original): The method according to claim 9, wherein said sheet is constructed of laminar films.

24 (Original): The method according to claim 9, wherein zeolytes are in the fluid bath to help keep it clean and deionized.

CLAIMS

1 (Currently amended): An apparatus for manufacturing a miniature optics, ball holding solar concentrator sheet comprising the fabrication stages of:

a) embedding an array of rotatable mirrored balls for concentrating solar energy in said sheet;

b) disposing said array ~~disposed~~ behind an optically transmissive surface;

c) encapsulating each of said mirrored balls ~~encapsulated~~ in a surrounding medium of an optically transmissive fluid; and

d) providing electric coupling means to rotate said mirrored balls within said sheet.

2 (cancelled): The apparatus of claim 1, wherein said sheet is a part of a solar concentrator.

3 (Original): The apparatus of claim 1, wherein said fluid is a lubricant.

4 (Original): The apparatus of claim 1, wherein said fluid is a dielectric.

5 (Currently amended): A manufacturing method for improving the rotatability of mirrored balls disposed in a miniature optics, ball holding solar concentrator sheet comprising the steps of:

a) providing said sheet with an optically transmissive surface;

b) surrounding said mirrored balls for concentrating solar energy with a shell of a lubricating fluid; and

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6 (cancelled): The method according to claim 5, wherein said sheet is a part of a solar concentrator.

7 (Original): The method according to claim 5, wherein said fluid is optically transmissive.

8 (Original): The method according to claim 5, wherein said fluid is a dielectric.

9 (Currently amended): A method for fabricating lubricating receptacles containing encapsulated rotatable mirrored balls in an optically transmissive solar concentrator sheet by means of at least one infiltrating fluid, the method comprising the process of:

a) holding said mirrored balls for concentrating solar energy somewhat rigidly captive in place in said sheet during and at the completion of its formation; and

b) introducing said infiltrating fluid to expand said sheet and form small fluid-filled annular cavities surrounding said rotatable mirrored balls.

10 (Previously amended): The method according to claim 9, wherein at least one dissolvable tray holds said mirrored balls in place in said sheet during its formation.

11 (Original): The method according to claim 9, wherein at least one pillar supports said sheet to enhance fluid access during the sheet infiltration and expansion process.

12 (Original): The method according to claim 9, wherein at least one of the fluids is optically transmissive.

13 (Original): The method according to claim 9, wherein at least one of the fluids is a dielectric.

14 (Original): The method according to claim 9, wherein the index of refraction of at least one of the fluids approximately matches that of said sheet.

15 (Original): The method according to claim 9, wherein the density of at least one of the fluids approximately matches that of said mirrored balls.

16 (Original): The method according to claim 9, wherein at least one of the fluids is lubricating.

17 (Original): The method according to claim 9, wherein at least one of the infiltrating fluids is vaporously removed.

18 (Currently amended): The method according to claim 9, wherein the ratio of the overall volume of said sheet (not including the volume of the ball cavities) to the volume of said mirrored balls is between a factor of 2 to 3.

19 (Original): The method according to claim 9, wherein at least one monolayer of said rotatable mirrored balls is encapsulated in said sheet.

20 (Original): The method according to claim 9, wherein a random dispersion of rotatable mirrored balls are encapsulated in said sheet.

21 (Original): The method according to claim 9, wherein the mirrored balls are pre-coated prior to being embedded in said sheet.

22 (Original): The method according to claim 9, wherein the mirrored balls are asymmetrically closer to the top of said sheet than to the bottom.

23 (Original): The method according to claim 9, wherein said sheet is constructed of laminar films.

24 (Original): The method according to claim 9, wherein zeolytes are in the fluid bath to help keep it clean and deionized.

Respectfully submitted,

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